

wireless signals and delivers them into the air.

Then a receiving device 400 (not shown in drawings) as in FIG. 3 which is provided for the door-locking device receives and analyzes the wireless signals.

In other words, as shown in FIG. 3, the receiving device 400 receives the wireless signals delivered from the mobile radio communication terminal 200 at its wireless signal receiving means (not shown in drawings), and generates a relay control signal at the door lock controlling means 410 through the port RAO according to the data obtained from processing said wireless signals.

Of course, also in the case where the user delivers infrared rays through a remote controller to open the locked door, the door lock controlling means 410 receives the infrared rays through an infrared ray receiver 420 to convert the infrared rays into electrical signals, and generates relay control signals through the port RAO according to the converted electrical signals as described above.

A switching device Q1 is turned on according to the relay control signals thus generated, and when the switching device Q1 is turned on, a driving current flows into a relay RL1, thereby automatically unlocking the door lock.

In the above, the present invention was described for automatically unlocking a door having an automatic door-locking device in apartments and buildings. However, the application of the present invention will not be limited thereto but may be extended to automobile doors, traveller's bags, bed room doors, parking lot wire-lock doors, hotel rooms, garages and the like.

According to the present invention as described above, in the case where the user has lost the key or has left the key inside the door, the door can be unlocked using a mobile radio communication terminal, such as a mobile phone.

Further, when a visitor visiting a house during the absence of the owner of the house who wants to let the visitor enter the house, the owner of the house can unlock the door for the visitor by remote control using a mobile radio communication terminal, which is very convenient for the user.

WHAT IS CLAIMED IS:

1. An apparatus for controlling a door by a mobile radio communication system, comprising:

a transmitting device for generating control signals to unlock at a remote place a door-locking device provided for a door, said door having a locking device;

a mobile radio communication terminal connected to said transmitting device through a wire for converting said control signals generated through said transmitting device into wireless signals for delivery; and

a receiving device installed within a door locking device of said door, for receiving and analyzing said wireless signals delivered by said mobile radio communication terminal and for automatically controlling a motor and unlocking the door if the analyzed signals are door-unlocking signals.

2. The apparatus as claimed in claim 1, wherein said transmitting device comprises:

a power switch PSW1 for power supply;

a constant voltage regulator 110 for maintaining a desired level of constant voltage of the power (12 V) when the power is turned on by the switch PSW1;

a receiver 120 for detecting DTMF signals in response to the user's manipulation of buttons; and

a control signal generator 130 for generating control signal data in response to the DTMF signals detected by said receiver 120.

3. The apparatus as claimed in claim 1, wherein said receiving device comprises:

a door lock control means 410 for receiving wireless signals delivered by said mobile radio communication terminal to process said wireless signals so as to generate relay control signals through a port RAO according to the data obtained from said processing of wireless signals;

a switching element Q1 for carrying out switching operations according to the relay control signals outputted from said door lock control means 410; and

a relay RL1 for automatically unlocking the door lock by the power which is supplied when said switching element Q1 is turned on.
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